The present invention pertains to a method for analyzing a cell by suppressing non-biological movement, or, in other words, suppression of movement of the cell caused by other than activity of the cell itself. The method comprises the steps of placing the cell in a solution having a viscosity enhancement medium. There is the step of measuring the motility of the cell. Multiple cells can be measured in parallel.

IN THE CLAIMS:

1. A method for analyzing a cell by suppressing movement of the cell caused by other than activity of the cell itself comprising the steps of:

placing the cell in a solution having a viscosity enhancement medium; and

measuring the motility of the cell in the solution.

9. A method for analyzing a cell by suppressing movement of the cell caused by other than activity of the cell itself comprising the steps of:

placing the cell in a solution; and

measuring the motility of the cell in the solution when there is no attachment of the cell involved.

10. A method for analyzing a cell by suppressing movement of the cell caused by other than activity of the cell itself comprising the steps of:

placing the cell in a solution; and

identifying and quantifying short lived effects or transient effects of added moiety on motility of the cell in the solution.

13. A method for analyzing a cell by suppressing movement of the cell caused by other than activity of the cell itself comprising the steps of:

placing the cell in a solution; and

controlling ambient motion of the cell in the solution as a reproducible method for analysis of motion in a 2D or 3D environment with non-adherent cells.

14. A method for analyzing a cell by suppressing movement of the cell caused by other than activity of the cell itself comprising the steps of:

placing the cell in a solution; and

analyzing 3D motion of the cell in the solution in the absence of a solid matrix upon which the cell can attach.

15. A method for analyzing a cell by suppressing movement of the cell caused by other than activity of the cell itself comprising the steps of:

placing the cell in a solution; and

suppressing the ambient motion of the cell in the solution on a 2D surface when there is no attachment involved of the cell.

18. A method for analyzing a cell by suppressing movement of the cell caused by other than activity of the cell itself comprising the steps of:

placing the cell in a solution; and

forming a thin film in the solution whose viscosity resists brownian and other sources of motion other than activity of the cell itself but does not interfere with active cell biological motion.

19. A method for analyzing a cell by suppressing movement of the cell caused by other than activity of the cell itself comprising the steps of:

placing the cell in a solution;

adding a protein or other biological or chemical moiety to the solution; and

analyzing the effect of the protein on cell motility, morphology, phenotype, division rate, cell death, or blebbing or disease state.

20. A method as described in Claim 19 wherein the protein is a human protein, antibody, growth factor, cytokine, kinase or protease.

21. A method as described in Claim 19 wherein the protein is transduced or transfected into the cell.

22. A method for analyzing a cell by suppressing movement of the cell caused by other than activity of the cell itself comprising the steps of:

placing the cell in a solution;

adding a protein to the solution; and

analyzing the protein function regarding the cell using cell motility as an analytical marker.

23. A method for analyzing a cell by suppressing movement of the cell caused by other than activity of the cell itself comprising the steps of:

placing the cell in a solution; and

placing methyl cellulose in the solution to reduce ambient motion of the cell in the solution and eliminate convective motion.

24. A method for suppressing movement of the cell caused by other than activity of the cell itself of a cell comprising the steps of:

placing the cell in a solution; and

forming a layer of methyl cellulose 34 to 137 Um thick in the solution.

25. A method for analyzing a cell by suppressing movement of the cell caused by other than activity of the cell itself comprising the steps of:

placing the cell in a solution; and

using methyl cellulose in the solution for stopping the effects of gravity on the cell in the solution.

26. A method for analyzing a cell by suppressing movement of the cell caused by other than activity of the cell itself comprising the steps of:

placing the cell in a solution; and

using methyl cellulose in the solution for reducing or eliminating the effects of micro-turbulances due to thermal convection in the solution.

31. A method for analyzing a cell by suppressing movement of the cell caused by other than activity of the cell itself comprising the steps of:

placing the cell in a solution; and

using methyl cellulose or any viscous fluid to separate biological motility from ambient motility.